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ScienceDirect

Procedia Engineering 178 (2017) 330 – 339

Procedia Engineering

www.elsevier.com/locate/procedia

16th Conference on Reliability and Statistics in Transportation and Communication, RelStat'2016, 19-22 October, 2016, Riga, Latvia

Logistical Costs Minimization for Delivery of Shot Lots by Using Logistical Information Systems

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Abstract

The article considers the possibility to reduce logistical costs using optimization of the supply chain management with the help of a decision support system. It was shown that the implementation of such systems at the transport companies allows to choose the best available options of transport route and mean of transport. It concerns in the first instance enterprises, which have an extensive dealer network and focus on deliveries of shot lots on delivery routes. The developed algorithm to make a reasonable management decision concerning the choice of route and delivery schedule gives an opportunity to manage optimally a vehicle fleet and to reduce idle runs.

The optimization of delivery routes is based on the minimization of fleet usage, their total run and standing time as well as takes into account traffic intensities on road sections. It allows also to reduce transport load on the road network, which leads to improve ecological situation in the city. The model for the city of NaberezhnyeChelny was built and tested within the scope of research. Its implementation gives a possibility to correct proposed routes in such a way as to avoid "problem" parts of road network.

Peer-review under responsibility of the scientific committee of the International Conference on Reliability and Statistics in Transportation and Communication

Keywords: supply chain management, delivery route, delivery schedule, decision support system

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Peer-review under responsibility of the scientific committee of the International Conference on Reliability and Statistics in Transportation and Communication
doi:10.1016/j.proeng.2017.01.059